

31EP/EA and 32EP/EA Series Explosion Proof

- ▶ CSA Approved
- ▶ ATEX Approved

Oil & Gas equipment needs a pressure transducer that is reliable and able to withstand extreme environmental and pressure conditions. Gems Sensors explosion proof units offer an alternative to high priced, unreliable alternatives. The 31EP and 32EP are CSA approved explosion proof, and the 31EA/32EA carries the ATEX approval. They all feature all stainless steel wetted parts, a broad selection of pressure connections and a wide choice of electrical outputs—the 32 Series of each group provide higher proof pressures. Our manufacturing process includes the latest automated equipment, producing consistent sensor performance.

The compact yet rugged construction of these units makes them ideal for installation where space in a hazardous environment is at a premium.



Specifications

Performance	
Long Term Drift	0.2% FS/YR (non-cumulative)
Accuracy	0.25% FS
Thermal Error	
31EP/EA	±1.5% max., ±1% typical / 212°F (100°C)
32EP/EA	±2% max.
Compensated Temperatures	-40°F to +203°F (-40°C to +95°C)
Operating Temperatures	-40°F to +203°F (-40°C to +95°C)
Zero Tolerance, Max.	0.5% of span
Span Tolerance, Max.	0.5% of span
Fatigue Life	Designed for more than 100 M cycles
Mechanical Configuration	
Pressure Port	See under "How to Order," last page
Wetted Parts	17-4 PH Stainless Steel
Electrical Connection	See under "How to Order," last page
Enclosure	IP67
Vibration	BSEN 60068-2-6 (FC) Sine (20G) BSEN 60068-2-64 (FH) Random (14.1 Grms)
Shock	BSEN 60068-2-27 (Ea) (50G, 11ms)
Approvals	
CSA (31EP/32EP)	Class I, Division 1, Groups A, B, C and D Class I, Zone 1 Exd IIC T4 Gb Class I, Zone 1 AExd T4 Gb
ATEX (31EA/32EA)	Exd IIC T4 Gb (Ambient Temperature: -40°C to +95°C)

EMC Specifications

Emissions Tests: EN61326-1:2006 and EN61326-2-3:2006		
EN55011:2007	Radiated Emissions:	30-230MHz 30dB µV/M @10M 230-1000MHz 37dB µV/M @10M
Immunity Tests: EN61326-1:2006 and EN61326-2-3:2006		
EN61000-4-2:2009	Electrostatic Discharge:	±4Kv contact ±8Kv air
EN61000-4-3:2006	Radiated Immunity:	10V/M 80-1000MHz 3V/M 1400-2000MHz 1V/M 2000-2700MHz
EN61000-4-4:2004	Fast Transients:	±0.25, 0.5, 1Kv
EN61000-4-6:2007	Conducted Immunity:	3V 0.15 to 80MHz 80% 1KHz modulation

Individual Specifications

Voltage	
Output (3-wire)	0 V min. to 10 V max. See under "How to Order," last page
Supply Voltage	1 Volt above full scale to 30 V max @ 4.5 mA
Source and Sinks	2 mA
Current	
Output (2-wire)	4-20 mA
Supply Voltage	8-24 Volts measured at the input to the transducer terminals
Maximum Loop Resistance	(Supply Voltage-8) x 50 ohms
Ratiometric	
Output	0.5 to 4.5 V (Source and sink 2 mA)
Supply Voltage	5 Vdc ±10% @ 4.5 mA

Pressure Capability

Pressure Range PSI (Bar)	Proof Pressure (x Full Scale)		Burst Pressure (x Full Scale)	
	31EP/EA	32EP/EA	31EP/EA	32EP/EA
100-300 (7-20)	2.00 x FS	3.00 x FS	40 x FS	
500-1,500 (40-100)			20 x FS	
2,000-6,000 (160-400)			10 x FS	
10,000 (700)			>60,000 PSI (4,000 bar)	
15,000 (1,000)				

Pressure Ports

NPT and SAE Dimensions in Inches. Metric and BSP Dimensions in MM.

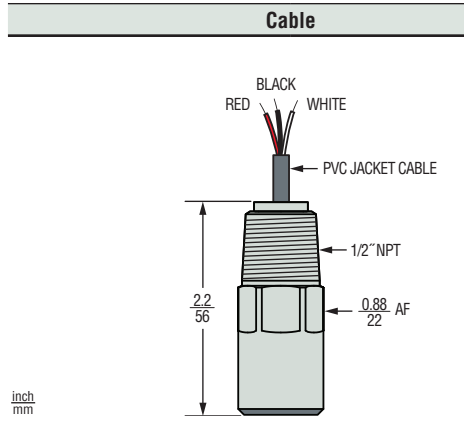
Fitting Code	08 = 1/8"-27 NPT	4D = 1/8"-27 NPT Dryseal	02 = 1/4"-18 NPT
Torque	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*
Fitting Code	4C = 1/4"-18 NPT Dryseal	0H = 1/2"-12 NPT	4N = 3/8"-24 UNF
Torque	2-3 TFFT*	2-3 TFFT*	18-20 NM
Fitting Code	04 = 7/16"-20 UNF with 37° Flare	1G = SAE 4 Female 7/16" Schraeder	1P = 9/16"-18 "Heavy Duty"
Torque	15-16 NM	18-20 NM	18-20 NM
Fitting Code	0S = G1/8" A Stud (BS 5380 Port)	01 = G1/4"-19 A	05 = G1/4"-19 A Integral Face-Seal
Torque	30-35 NM	30-35 NM	30-35 NM
Fitting Code	4P = G1/2" A 27A/F	0L = M12 x 1.5	2T = M12x1.5 HP Metal Washer Seal
Torque	30-35 NM	28-30 NM	30-35 NM
			2-3 TFFT*

*NPT Threads 2-3 turns from finger tight. Wrench tighten 2-3 turns.

General Notes:

- The diameter of all cans is 19 mm (0.748")
- Hex is 22 mm (0.866") Across Flats (A/F) for deep socket mounting, except Fitting Code 4P which is 27mm (1.063").
- O-Ring material, where applicable, is Viton® unless otherwise specified.

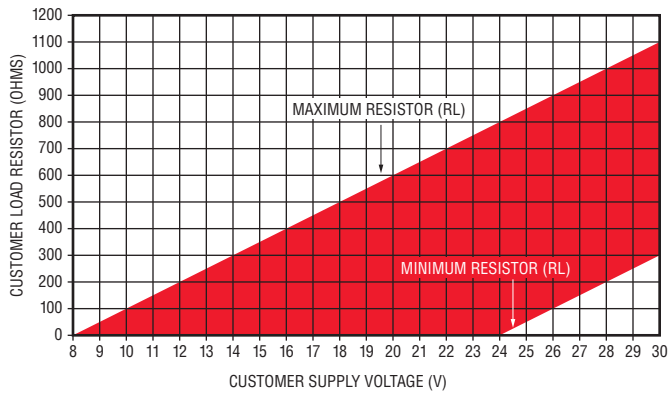
Cable-Out Type



Code S

Wire Color	Voltage Mode	Current Mode
Red	Supply	Supply
Black	Ground	Return
White	V _{out}	No Connect

Current Output Mode (Load Resistor Range)



Minimum Resistor Value = $50 \cdot (+V - 24)$ for $+V > 24V$
 Maximum Resistor Value = $50 \cdot (+V - 8)$ for $+V > 8V$

How to Order

Use the **bold** characters from the chart below to construct a product code

	31EP	B	200PG	02	S	R	01	
Series	31EP / 32EP - CSA Approved Pressure Transducer 31EA / 32EA - ATEX Approved Pressure Transducer							Cable Length
Output	B - 4-20 mA N - 0.5-4.5 V T - 0.5-4.5 V Ratiometric	C - 1-6 V R - 0-5 V	H - 1-5 V S - 0-10 V					01 - 1 meter 02 - 2 meters 03 - 3 meters 04 - 4 meters 05 - 5 meters 10 - 10 meters
Pressure Range – psi	100PG - 0-100 psiG 150PG - 0-150 psiG 200PG - 0-200 psiG 300PG - 0-300 psiG 500PG - 0-500 psiG 600PG - 0-600 psiG 750PG - 0-750 psiG	10CPG - 0-1,000 psiG 15CPS - 0-1,500 psiS 20CPS - 0-2,000 psiS 25CPS - 0-2,500 psiS 30CPS - 0-3,000 psiS 35CPS - 0-3,500 psiS 40CPS - 0-4,000 psiS 50CPS - 0-5,000 psiS 60CPS - 0-6,000 psiS 75CPS - 0-7,500 psiS	10KPS = 0-10,000 psiS					Optional Restrictor R - Restrictor 0 - No Restrictor
Pressure Range - bar	0007G - 0-7 barG 0010G - 0-10 barG 0016G - 0-16 barG 0025G - 0-25 barG 0040G - 0-40 barG 0060G - 0-60 barG 0100S - 0-100 barS	0160S - 0-160 barS 0250S - 0-250 barS 0400S - 0-400 barS 0600S - 0-600 barS 1000S - 1,000 barS ²						Electrical Connection S - Explosion Proof Conduit 1/2" NPT
Notes:	1. For use with pull-up or pull-down resistors, contact factory. 2. Range 1,000 bar available with -2T pressure port only. 4. Pressure ports 0E and 1G are NOT available with the Restrictor option.							Pressure Port ⁴ 08 - 1/8"-27 NPT External 02 - 1/4"-18 NPT External 0H - 1/2" NPT 04 - 7/16"-20 External (SAE #4, J514) 1J - 7/16"-20 External (SAE #4, J1926-2) 0E - 1/4"-18 NPT Internal 1G - Schraeder SAE #4, 7/16" Internal 4B - 1/4" Female (7/16UN with Schraeder Deflator) 1P - SAE 6 (9/16"-18 UNF 2A) 4C - 1/4"-18 NPTF External (Dryseal) 4D - 1/8"-27 NPTF External (Dryseal) 4N - SAE 3 (3/8"-24 UNF External)
								European Threads 0S - G1/8" A Stud (BS 5380 Port) 01 - G1/4" External 05 - G1/4" External Soft Seal 0A - G1/4"-19 PT (JIS) or BSPT 4P - G1/2" A 27A/F 0L - M12 x 1.5 (<1,000 bar, 15,000 psi) 2T - M12 x 1.5 (6g) (≥1,000 bar, 15,000 psi) 0K - M14 x 1.5 Straight